UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/553,691	06/30/2006	Akiko Mizutani	AD6891USPCT	2013

7590 06/25/2008

Craig H Evans
E I Du Pont De Nemours and Company
Legal Patent Records Center
4417 Lancaster Pike
Wilmington, DE 19898

EXAMINER	
SANDERS, KRIELLION ANTIONETTE	
ART UNIT	PAPER NUMBER
1796	

MAIL DATE	DELIVERY MODE
06/25/2008	PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No.	Applicant(s)	
	10/553,691	MIZUTANI ET AL.	
	Examiner	Art Unit	
	Kriellion A. Sanders	1796	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE *3* MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☐ Responsive to communication(s) filed on _____.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-6* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-6* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☒ All b)☐ Some * c)☐ None of:

1.☒ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____.

DETAILED ACTION

Specification

1. The lengthy specification has not been checked to the extent necessary to determine the presence of all possible minor errors. Applicant's cooperation is requested in correcting any errors of which applicant may become aware in the specification.

2. The disclosure is objected to because of the following informalities: There are numerous errors in syntax throughout the specification such as at page 1, paragraph 1, lines 10 and 11.

Appropriate correction is required.

Claim Rejections - 35 USC § 112

3. The following is a quotation of the second paragraph of 35 U.S.C. 112:

> The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

4. Claims 1-6 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

5. The claims are indefinite in the description of polyester component (d) as it is defined in relation to polyester component (a). The claims include a proviso that limits the mol% of said aromatic dicarboxylic acids of said polyester copolymer (d) to less than the mol% of the carboxylic acid content of said copolymers (a), (b), and (c). However since, the invention does not require that copolymers (a), (b), and (c) be present, this limitation makes no sense when the only polyester selected is a polyester (d).

Claim Rejections - 35 USC § 102

6. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

> A person shall be entitled to a patent unless –
>
> (b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

Claim Rejections - 35 USC § 103

7. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

Claims 1, 2, 3, 5 and 6 are rejected under 35 U.S.C. 102(b) as anticipated by or, in the alternative, under 35 U.S.C. 103(a) as obvious over Terada et al., US Patent No. 5,969,009.

Applicant's invention pertains to an injection molded product made of a molding composition comprising:

(A) 20 to 98.8 wt. of at least one polyester selected from the group consisting of:

an aromatic polyester copolymer (a) having repeating units comprising an acid component and a glycol component,

wherein the acid component comprises about

50 to 90 mol% of terephthalic acid, about

0.2 to about 6 mol% of sulfonic acid metal salt, and about

4 to 49.8 mol% of aliphatic dicarboxylic acid;

wherein the glycol component comprises

about 50 to 99.9 mol % of ethylene glycol

and about 0.1 to 50 mol% of diethylene glycol;

a polyester copolymer (b)prepared by copolymerization with said copolymer (a) with polyalkylene glycol,

a branched polyester copolymer (c) prepared by polycondensation of said copolymer (a) with polyalkylene glycol, and,

a polyester copolymer (d) having repeating units comprising aromatic dicarboxylic acids and a glycol component; with the proviso that the mol% of said aromatic dicarboxylic acids of said polyester copolymer is less than the mol% of the carboxylic acid content of said copolymers (a), (b), and (c);

(B) 1 to 60 wt. % of material selected from the group consisting of reinforcements and fillers;

(C) 0. 1 to 7 wt. % of crystallization accelerator;

(D) 1 to 60 wt.% of at least one flame retardant selected 5 from the group consisting of an inorganic flame retardant, a phosphorous-based flame retardant and a phenolic polymer; and

(E) 0.I to 5 wt. % of lubricant.

Terada et al, discloses a molding material comprising, as a binder, a thermosetting composition of an unsaturated polyester, an addition-polymerizable monomer and a low shrink agent, the addition-polymerizable monomer containing a monomer having an affinity for alkaline solution.

As the monomer having an affinity for alkaline solution, a monomer having an ethylene bond and a carbonyl or sulfonyl group is preferably used. More specifically, a compound selected from the group consisting of a carboxylic acid having an ethylene bond, a sulfonic acid having an ethylene bond, a metal salt of the carboxylic or sulfonic acid, etc.

The unsaturated polyester used for the binder of the molding material of the present invention is obtained by polycondensing an unsaturated polybasic acid and a saturated polybasic acid with glycols according to a known method. Examples of the unsaturated polybasic acid include maleic anhydride, fumaric acid, itaconic acid, citraconic acid and the like. Examples of the saturated polybasic acid include maleic anhydride, isophthalic acid, terephthalic acid, adipic acid, sebacic acid, tetrahydromaleic anhydride, methyltetrahydrophthalic anhydride, endomethylenetetrahydrophthalic anhydride, Het acid, tetrabromophthalic anhydride and the like.

Examples of the glycols include ethylene glycol, propylene glycol, diethylene glycol, dipropylene glycol, neopentyl glycol, 1,3-butanediol, 1,6-hexanediol, hydrogenated bisphenol A, a bisphenol A propyleneoxide compound, dibromoneopentyl glycol and the like.

The low shrink agent used for the molding material of the present invention is preferably a thermoplastic polyester. Among the thermoplastic polyesters, for example, polymers represented by the formula (4) obtained by ring opening polymerization of lactone, such as

polycaprolactone, polypropiolactone and the like; and copolymers represented by the formula (5) of a glycol and an aliphatic dicarboxylic acid, such as polycaprolactone, polypropiolactone, polyethylene adipate, polybutylene adipate, polydipropylene adipate, polypropylene adipate, polyethylene succinate, polybutylene succinate, polydipropylene succinate, polypropylene succinate, polyethylene phthalate, polypropylene phthalate, polydipropylene phthalate, polybutylene phthalate, polyethylene isophthalate, polypropylene isophthalate, polydipropylene isophthalate and polybutylene isophthalate and the like are preferred.

The addition-polymerizable monomer as a feature of the present invention is preferably contained in an amount within the range from 5 to 100 parts by weight, more preferably from 40 to 80 parts by weight, based on 100 parts by weight of the total monomer.

The above polyester is preferably contained in an amount within the range from 1 to 100 parts by weight, more preferably from 2 to 50 parts by weight, based on 100 parts by weight of the above unsaturated polyester.

If necessary, fillers, thickeners, release agents, wax, colorants and the like can be added to the molding material of the present invention. The wax of the patented invention would function as a lubricant in the same manner as in applicant's invention. See applicant's specification at page 16, first paragraph.

Examples of the thickener include beryllium oxide, magnesium oxide, magnesium hydroxide, calcium oxide, calcium hydroxide, zinc oxide, benzoic acid, phthalic anhydride, tetrahydrophthalic anhydride, maleic anhydride and the like. Magnesium hydroxide of the patented invention would function as a flame retardant in the same manner as in applicant's invention

Examples of the release agent include stearic acid, zinc stearate, calcium stearate and the like.

Patentee indicates that the compositions may include additional fillers (e.g. calcium carbonate, calcium silicate, barium sulfate, aluminum hydroxide, talc, mica, etc.), reinforcers (e.g. glass fiber, carbon fiber, etc.), thickeners, release agents and colorants may be formulated. The talc of the patented invention would function as crystallization accelerator in the same manner as in applicant's invention.

In Examples 1 to 6, patentee indicates that injection molding may be used.

Applicant's components of the present invention are disclosed by Terada et al. The particular weight ratios of components are also suggested to such an extent that they would overlap with those of the present claims when formulated or at least be obvious to the ordinary practitioner of this art. Also, upon formulation, the compositions of Terada et al would be expected to possess properties in melting point and heat distortion temperature that are essentially the same as applicant's, since the components of the inventions and the formulation of these components are essentially the same.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Kriellion A. Sanders whose telephone number is 571-272-1122. The examiner can normally be reached on Monday through Thursday 8:30am-7:00pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Harold Pyon can be reached on 571-272-1498. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/Kriellion A. Sanders/

Primary Examiner, Art Unit 1796

Kriellion A. Sanders
Primary Examiner
Art Unit 1796

ks